(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 23 June 2005 (23.06.2005)

PCT

(10) International Publication Number WO 2005/057786 A1

- (51) International Patent Classification⁷: 1103B 19/00
- H03K 5/00 //
- (21) International Application Number:

PCT/SE2003/001919

(22) International Filing Date:

10 December 2003 (10.12.2003)

(25) Filing Language:

English

(26) Publication Language:

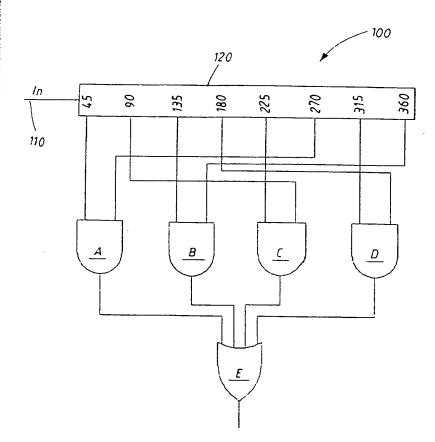
English

- (71) Applicant (for all designated States except US): TELE-FONAKTIEBOLAGET LM ERICSSON (publ) [SE/SE]: S-164-83 Stockholm (SE).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): JACOBSSON, Harald [SE/SE]: Fullrigguregatan 10A, S-426-74 Västra Frölunda (SE), LEWIN, Thomas [SE/SE]: Landstormsvägen 40, S-439-94 ONSALA (SE).

- (74) Agent: ALBIHNS GÖTEBORG AB; Box 142, S-401 22 GÖTEBORG (SE).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BE, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: A FREQENCY MULTIPLIER



(57) Abstract: The invention discloses a device for multiplying the pulse frequency of a signal, a pulse train, comprising input means for the signal and means for accessing the signal at points with a predetermined phase difference between them. The device additionally comprises means at a first level for combining accessed signal pairs, with one and the same phase distance within all the combined pairs, the output from each first level combining means being a pulse train. The device additionally comprises combining means at a second level for combining the pulse trains from the first level, and the combining means at the first level are such that the pulses in their output pulse trains have rise flanks which always coincide with the rise flank of the first signal in the combined accessed signal pairs, and fall flanks which always coincide with the fall flanks of the second signal in said pair.

WO 2005/057786 A1



Declaration under Rule 4.17:

— of inveniorship (Rule 4.17(iv)) for US only

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.